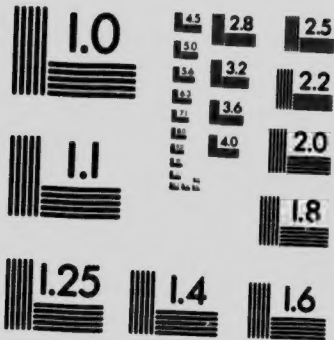


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PROVINCE OF BRITISH COLUMBIA.

DEPARTMENT OF AGRICULTURE (LIVE STOCK BRANCH).

Noxious Weeds, their Identification and Eradication.

BY H. O. ENGLISH, SOIL AND CROP INSTRUCTOR.

THE following are the weeds classified as noxious under the "Noxious Weeds Act" (chapter 66, 1915) of the Province of British Columbia:—

Canada thistle.	Tumbling mustard.
Perennial sow-thistle.	Ball mustard.
Annual sow-thistle.	Wild oats.
Bull-thistle.	Stinkweed.
Russian thistle.	Ragweed.
Ox-eye daisy.	Blue burr or stickseed.
Wild mustard or charlock.	Dodder.

These may be classified according to the length of time they live, as follows:—

Annals.—Weeds which germinate, bloom, fruit, and die in one year or season, which class includes:—

Annual sow-thistle.	Wild oats.
Russian thistle.	Ragweed.
Tumbling, ball, and wild mustards.	Blue burr.
Stinkweed.	Dodder.

Biennials.—Weeds which produce leaves and roots the first year and flowers and seeds the second year, after which they die; to which class bull-thistle belongs.

Perennials.—Weeds which last from year to year, blooming and seeding annually. These are subdivided into two classes:—

- (a.) Weeds which have underground creeping stems or root-stalks, such as Canada and perennial sow-thistles;
- (b.) Weeds with roots which do not spread underground, such as ox-eye daisy.

GENERAL INSTRUCTIONS RE CONTROL AND ERADICATION OF NOXIOUS WEEDS.

- (1.) Never allow weeds to mature seeds. Cut those on the roadsides, headlands, in waste places, and in fence corners, as well as those in the fields.
- (2.) Sow only pure seed. Impure seed is dear at any price. Pure seed is the purchaser's right by law and he should insist on having it.
- (3.) Avoid feeding stock upon grain or meal containing weed-seeds in any quantity. Such food should be finely ground or boiled before being fed.
- (4.) Annuals and biennials may be controlled by frequent and thorough *shallow* cultivation. By shallow cultivation the seeds are kept near the surface; by frequent stirring of the soil they are made to sprout; and, having sprouted, they can be killed by further cultivation. The seeds of some annuals will remain in the soil for twenty years if ploughed down beyond the reach of the air, and will germinate when brought to the surface. Do not plough more than 3 or 4 inches deep if the field is infested with annual weeds, such as wild oats and mustard.

(5.) For perennials frequent shallow cultivation is essential. Each weed of this class needs special treatment to eradicate, but the general principle obtains that if the weeds are not allowed to make any vegetative growth for one year it must perforce die out. To facilitate this, summer fallow and grow hoed crops, such as potatoes, corn, and roots, in the rotation.

(6.) Hand-pull single specimens.

(7.) A flock of sheep renders valuable assistance.

(8.) Be constantly on the watch for new weeds. Do not wait until a weed has become established before finding out what it is. If you cannot identify it, forward a specimen, carefully wrapped in damp cloth or moss, to the Department of Agriculture, Victoria, B.C.

SPECIFIC INSTRUCTIONS RE IDENTIFICATION AND ERADICATION OF NOXIOUS WEEDS.

ANNUALS.

(1.) *Annual Sow-thistle*.—Roots fibrous; stems leafy, 1 to 4 feet high; flowers in close clusters, pale yellow, $\frac{1}{2}$ to $\frac{3}{4}$ inch across. Flowers May to August; produces seed July to September.

To eradicate: Plough shallow as early as possible after harvest and cultivate frequently during autumn. Sow hoed crop and cultivate thoroughly during growing season. Follow with grain-crop seeded with clover. Hand-pull weeds in grain-crop and take one or two crops of hay or pasture before breaking up sod. Never allow it to go to seed.

(2.) *Russian Thistle*.—A bushy plant; leaves short, thin, and prickly-tipped, giving whole plant prickly appearance. A tumbleweed, hence spherical in general appearance. Flowers and seeds appear in axils of leaves. Flowers July to September; produces seed August to November.

To eradicate: Harrow grain-crops as late as possible. Prevent ripening of seed in orchards, fence corners, roadsides, etc. Mow, rake off, and burn to prevent scattering by wind.

(3.) *Tumbling Mustard*.—Stems 2 to 4 feet high, much branched; leaves at the base resemble dandelion-leaves, while upper leaves are more finely divided; flowers yellow, $\frac{1}{3}$ inch across; seed-pods 2 to 4 inches long, very slender, ending in small flattened bulbs, which assist in the identification of the weed. Each pod contains about 120 seeds. Very few hairs on plant except at its base.

To eradicate: Plant clean seeds, rotate crops, and keep dormant seeds in soil to grow by frequent shallow cultivations. Hand-pull small plants and never allow to produce seed.

(4.) *Wild Mustard or Charlock*.—Stems 1 to 2 feet high, rough, slightly branched, hairy, and purple at points where flowers are produced; leaves large and rough at edges; flowers bright yellow, fragrant, $\frac{1}{2}$ inch across; seed-pods 1 to 2 inches long, contain 10 to 15 seeds.

To eradicate: See "Tumbling Mustard."

(5.) *Ball Mustard*.—Stems slender and erect, with few branches, 1 to 3 feet high; leaves arrow-shaped; flowers orange-yellow, $\frac{1}{4}$ inch across; seed-pods small and round, contain 1 seed each.

To eradicate: See "Tumbling Mustard."

(6.) *Stinkweed*.—Stem erect, slender, and slightly branching; leaves small and bright green; flowers minute, white, and grow in clusters; pods flat, characteristic shape, $\frac{3}{4}$ inch across, and pale green in colour. The odour of the plant is characteristic. Flowers May to November; produces seed May to November.

To eradicate: Practise shallow cultivation and grow hoed crops. Do not allow stock to graze, as they scatter the seed by means of feet in damp weather. Hand-pull small patches and burn weeds as soon as dry.

(7.) *Wild Oats*.—Very similar to tame oats. Panicle ripens at the top first; kernels have long awns attached to backs, sucker-like mouths, and short stiff hairs around basal end. Ripens earlier than tame oats and shatters readily.

To eradicate: Practise rotation of crops, sow clean seed, and fall cultivation to induce seeds to germinate in the spring, when their destruction is easy. The growing of 6-rowed barley and the seeding down to alfalfa and clover for hay has been practised with success.

(8.) *Ragweed*.—A coarse branching plant with hairy stems, 2 to 4 feet high; leaves divided; flowers small and yellowish; seeds small, brown, and pear-shaped. Plant has a detestable odour. Flowers June to September; produces seed July to November.

To eradicate: Hand-pull from grain-fields and cut where found on roadsides and in waste places. Badly infested grain-fields should be ploughed immediately after harvest.

(9.) *Blue Burr or Stickseed*.—Stems erect, 1 to 2 feet high, covered with numerous white hairs; leaves long, hairy, and stalkless; flowers small, pale blue, about $\frac{1}{4}$ inch across; seeds $\frac{1}{4}$ inch long, pear-shaped, with barbed bristles on one side.

To eradicate: Sow clean seed, practise thorough spring cultivation, and pull scattered plants. Mow young plants where found in waste places to prevent formation of seed.

(10.) *Dodder*.—A parasitic plant; the stems, long and slender, twine about host-plants (usually alfalfa and clover); flowers white or pinkish in clusters; seeds small, brown, and irregular in shape. Plants appear to have no leaves. Young plant has roots, but these die as soon as host-plant is found.

To eradicate: Sow clean seed. Cut infested fields early and either burn or make hay of the crop.

BIENNIAL.

(11.) *Bull-thistle*.—A tall, coarse appearing plant; leaves woolly; flowers very large, $1\frac{1}{2}$ inches long by $1\frac{1}{2}$ inches across, and purple in colour; flowers June to August; produces seed July to September. Abounds in waste places.

To eradicate: Plough or cut down before the flowers open. In pastures cut below the crown of the plant. Prevent formation of seed for two years.

PERENNIALS.

(12.) *Canada Thistle*.—A thistle with deep running root-stalks; stems 1 to 5 feet high; leaves variable in size, curled, very prickly, and downy on the under-side; flowers small, $\frac{1}{2}$ to $\frac{3}{4}$ inch across. They vary in colour from pale purple to pink.

To eradicate: Plough deeply just as the flowers open and continue with very thorough cultivation. Do not allow any growth for one year. Short crop rotations are effective.

(13.) *Perennial Sow-thistle*.—A deep-rooted plant with vigorous root-stalks; stems 1 to 5 feet high, hollow, and branched at the top; each branch bears a number of orange-yellow flowers $1\frac{1}{2}$ inches across. Leaves long and very irregular. Plants full of bitter, milky juice.

To eradicate: Prevent leaf-growth by cultivating field frequently with plough or broad-toothed cultivator. Grow cultivated crops. (See "Canada Thistle.")

(14.) *Ox-eye Daisy*.—A shallow-rooted plant; stems 1 to 3 feet high; leaves lance-shaped and toothed; flowers single on long stalks, white with yellow centres, $1\frac{1}{2}$ to 2 inches across. Usually found in old pastures.

To eradicate: Sow clean seed. Infested sod should be ploughed shallow in August and cultivated until the frost comes. Crop rotations are beneficial.

NOTE.—It is very important that those engaged in farming should get to know the worst weeds and the weed-seeds most frequently found in commercial seeds. This they can do with little trouble. Strange weeds should be sent to the Department of Agriculture, Victoria, B.C., for identification, and a collection of the most common weed-seeds should be secured for reference and comparison.

The Department of Agriculture is at the service of farmers, gardeners, Weed Inspectors, and others in the identification of weeds, weed-seeds, plant-diseases, grasses, and economic plants. Plant specimens and samples of seeds should be carefully packed and addressed, with postage prepaid, to the Department of Agriculture, Victoria, B.C.



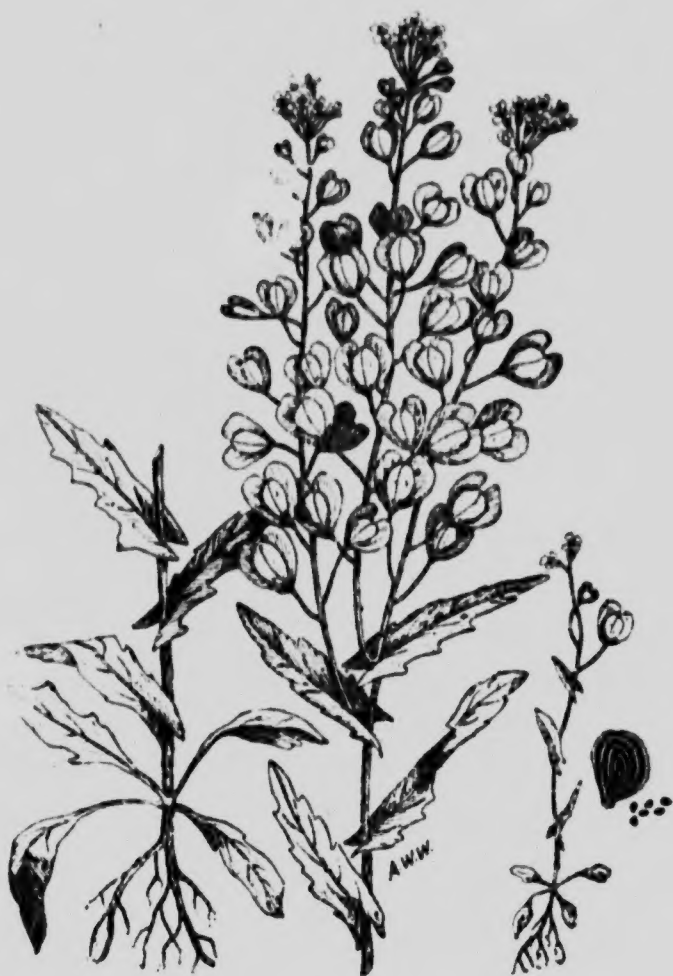
Ragweed.



Wild oats.



Ball mustard.



Stinkweed.



Wild mustard.



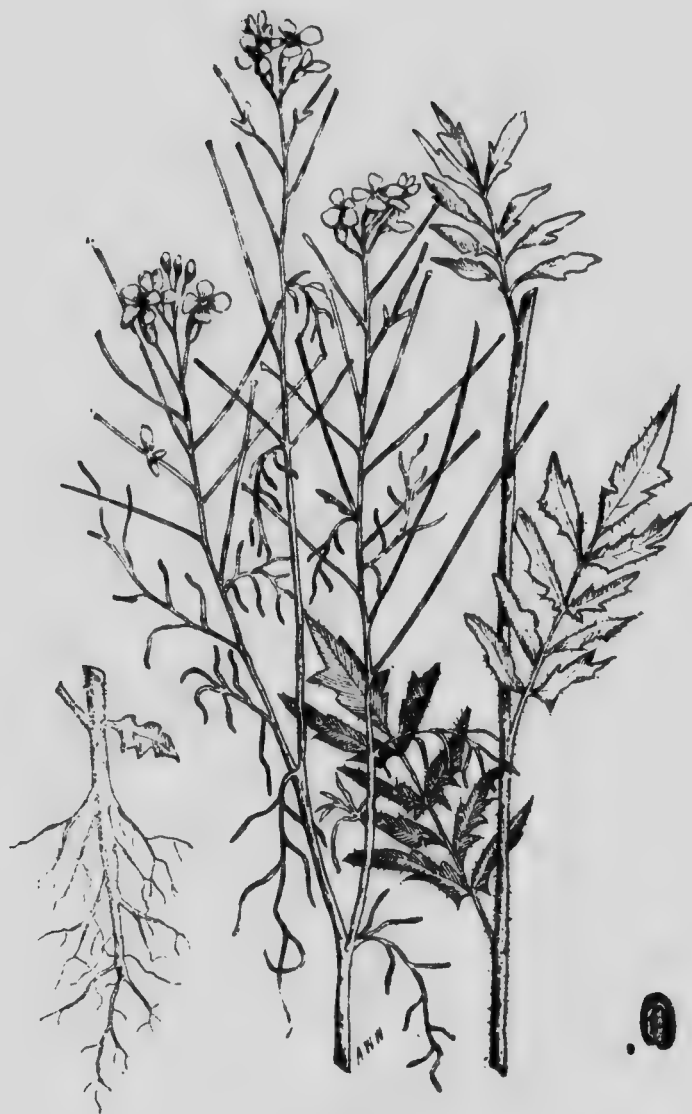
Ox-eye daisy.



Blue burr or stickseed.



Perennial sow-thistle.



Tumbling mustard.



Annual sow-thistle.



Canada Thistle.



Russian thistle



Field dodder on red clover. (a) Flowering cluster; (b) cluster of dry seed-vessels.

CHAPTER 66.

An Act respecting Noxious Weeds.

[6th March, 1915.]

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of British Columbia, enacts as follows:—

Short Title.

1. This Act may be cited as the "Noxious Weeds Act."

Interpretation.

2. In this Act, unless the context otherwise requires, the following expressions have the meaning hereinafter respectively assigned to them, namely:—

"Assessor" means a Municipal or a Provincial Assessor, according to the context;

"Department" means the Department of Agriculture;

"Inspector" means an Inspector appointed under this Act or any police officer or constable, whether Provincial or municipal;

"Minister" means the Minister of Finance and Agriculture;

"Non-resident land" means all land which is unoccupied and is owned by a person who is not resident within the Province, or by a corporation not having a place of business in the Province; and "resident land" means all land which is occupied or which is owned by a resident of the Province, or by a corporation having a place of business in the Province;

"Noxious weeds" means and shall include Canada thistle, perennial thistle, sow-thistle, bull-thistle, Russian thistle, ox-eye daisy, wild mustard or charlock, tumbling mustard, ball mustard, wild oats, stinkweed, ragweed, blue burr or stickseed, dodder, and such other weeds as may be specified by an Order in Council published in at least two consecutive issues of the Gazette;

"Owner" includes every person who has any estate or interest in land.

Destruction of Weeds.

3. (1.) It shall be the duty of every occupant of land, or, if the land is unoccupied, it shall be the duty of the owner thereof or the accredited agent of such owner resident in the Province, to cut down and burn or effectively destroy all noxious weeds growing on such land, in each year between the first day of April and the first day of November, as often as may be necessary to prevent the ripening and scattering of the seed of noxious weeds.

(2.) For the purpose of this Act, the Council of any municipality shall be deemed to be the owner of all lands within the boundaries of the municipality, including streets, parks, and vacant lots, and of that portion of any road adjoining the municipality which lies between the centre line thereof and the municipal boundary.

4. Every owner or occupant, or agent of an owner or occupant, failing or neglecting to observe and carry out the provisions of section 3 shall be liable to a penalty of not less than twenty-five dollars nor more than one hundred dollars, to be recovered with costs by proceedings under the "Summary Convictions Act," and in default of payment the offender shall be liable to imprisonment for a term not exceeding six months.

5. It shall be the duty of every Municipal Council and every such Council is hereby empowered to make due provisions by by-law for the eradication and destruction of noxious weeds growing within the limits of the municipality and on every road and highway immediately adjoining the municipality to a distance or extent of that half of the width of such road or highway which is nearest to the municipal boundary.

6. (1.) It shall be the duty of every railway company to cause all noxious weeds growing on the right-of-way and over land of the company adjoining the railway, and it shall be the duty of every irrigation company to cause all noxious weeds

growing in or upon the ditch or right-of-way of the company, to be cut down or to be rooted out and burned or effectively destroyed as often as may be necessary each year before the plants have sufficiently matured to seed.

(2.) Every railway company and every irrigation company which fails to comply with this section shall incur a penalty of two dollars for every day during which such company neglects to do anything which it is required to do.

(3.) The Mayor or Reeve of the municipality or the Government Agent of the district in which the said land or ground lies may cause all things to be done which the said railway company or the said irrigation company is required to do, and for that purpose may enter by himself and his assistants or workmen upon such land, and the municipality or the Minister, as the case may be, may recover the expenses and charges incurred in so doing, with costs, in any Court of competent jurisdiction.

7. This Act shall apply to the whole Province, but the Lieutenant-Governor in Council may exempt from its operation large tracts of waste or unoccupied lands in unorganized territory.

Notification to Owners, etc.

8. (1.) Any Inspector finding noxious weeds growing on occupied lands shall notify the occupant thereof to burn or otherwise effectively destroy such weeds within seven days from the date of such notice.

(2.) Any Inspector finding noxious weeds growing on unoccupied lands shall notify the owner by registered mail addressed to his last-known address (if any) to burn or otherwise effectively destroy such weeds within seven days from such notice.

(3.) Any Inspector finding noxious weeds growing in or upon any ditch or right-of-way of any irrigation company shall notify the manager, superintendent, or other officer of the Company, either personally or by registered mail, to burn or otherwise effectively destroy such weeds within seven days from the date of such notice.

(4.) Any Inspector finding noxious weeds growing on any railway right-of-way or on any unoccupied land owned by or forming part of the land grant of any railway company shall notify the nearest station agent, either personally or by registered mail, to burn or otherwise effectively destroy such weeds within seven days from the date of such notice.

9. Where noxious weeds are growing upon non-resident land it shall not be necessary to give any notice before proceeding to cut down and burn or otherwise destroy them, but it shall be the duty of the Inspector to cause such noxious weeds to be burned or otherwise effectively destroyed forthwith.

10. When noxious weeds are growing upon any lands of the Crown, such notice as aforesaid shall be left at the office of the deputy of the Minister if such lands are within the Victoria Assessment District, and, if without the Victoria Assessment District, at the office of the Government Agent or other Government officer nearest to the lands whereon noxious weeds are growing; and it shall be lawful for the deputy, or Government Agent, or other Government officer, as the case may be, to employ the necessary labourers and to eradicate and burn or otherwise effectively destroy such noxious weeds, and the expenses incurred in so doing shall be paid out of the Consolidated Revenue Fund: Provided, however, that this section shall not apply to that half of the width of any road which adjoins the boundary of a municipality.

11. The notice to be given by the Inspector shall be in writing, and shall be sufficient if in the form in the Schedule or to the like effect.

12. Any person to whom notice has been given under any of the preceding sections who neglects to carry out the directions contained therein shall be guilty of an offence, and on summary conviction thereof shall be liable to a penalty of not exceeding one hundred dollars and costs.

13. In case noxious weeds are not cut down and burned or otherwise destroyed on any land pursuant to any notice given by an Inspector, or in case the name and address of the owner of such land is unknown, or the owner is a non-resident of the Province, the Inspector or any person or persons directed by him may forthwith

enter upon the land with the necessary implements and root up and burn or otherwise effectively destroy the noxious weeds thereon.

14. Every Inspector of Noxious Weeds, for the purpose of performing his duties and exercising the powers herein contained, shall have the right to enter upon any land without the consent of the owner or occupant, and no Inspector shall be deemed a trespasser by reason of such entry or be liable for any damage occasioned by reason thereof, unless such damage was occasioned by such Inspector wilfully and unnecessarily.

Inspectors.

15. The Lieutenant-Governor in Council may appoint as Inspectors such persons, other than police officers and constables, as may be required for the more effectual carrying out of the provisions of this Act, and may fix the remuneration of such Inspectors.

Expenses and Accounts.

16. (1.) Every Inspector shall keep an accurate account of the expenses incurred by him in carrying out the provisions herein contained applicable to his duties with respect to each parcel of land entered upon, and shall furnish a detailed statement, verified by statutory declaration, of such expenses, describing the land entered upon, to the Minister, Government Agent, or Municipal Clerk, as the case may be, and the said expenses shall be audited and such amount as may be deemed just shall be allowed, and a certificate for the amount allowed shall be issued by the Minister, Government Agent, or Municipal Clerk, and shall be prima facie evidence that the amount named has been expended in carrying out the provisions of this Act.

(2.) Such sums as have been so allowed shall, on production of such certificate to the collector, be placed upon the municipal or Provincial collector's roll, as the case may be, against the land described or referred to in the statement of the Inspector, to be collected in the same manner as other taxes.

(3.) In the case of non-compliance with notice, or non-resident owners, a certificate signed by the Minister, Government Agent, or Municipal Clerk, that certain expenses have been incurred in the destruction of noxious weeds, shall be prima facie evidence that the said amount has been so expended, and shall be accepted by the Assessor for collection in the same manner as other taxes: Provided, however, that said certificate shall not, for the purpose of the sale of land, be effective until the first day of January next after the year in which such certificate was issued.

Vending Grain containing Noxious Weeds.

17. (1.) Any person who vends or gives for seed purposes any grain, grass, or other seed, among which there is present seed of noxious weeds in a greater proportion than five to one thousand of the seed sold or offered, exposed, or held in possession for sale, shall be liable, on summary conviction, to a penalty of not less than ten dollars nor more than one hundred dollars, and the Magistrate making any conviction under this section may order that the grain, grass, or seed sold contrary to the provisions of this section shall be confiscated or destroyed.

(2.) Any person who knowingly conveys any noxious weeds from one farm to another, either in threshing machines, fanning mills, or otherwise, shall, on summary conviction, be liable to a like penalty.

Penalties.

18. (1.) The penalties provided by this Act shall be recoverable by proceedings under the "Summary Convictions Act."

(2.) Violation of any provision of this Act for which no penalty is provided shall be an offence, and the offender shall, on summary conviction, be liable to a penalty not exceeding fifty dollars and costs.

Repeal.

19. Chapter 240 of the "Revised Statutes of British Columbia, 1914," and chapter 82 of the Statutes of 1914 are hereby repealed.

VICTORIA, B.C.:

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1916.